

What is claimed is:

1. A handheld instrument for insertion of an acetabular liner into an acetabular cup comprising:

a shaft having an internal channel therethrough and a first and a second end portion, the first end portion configured to sealingly engage with a bulb syringe;

a bulb syringe sealingly engaged with the first end portion of the shaft and operably connected to the internal channel of the shaft; and

a head having a curvilinear outer perimeter and operably attached to the second end portion of the shaft and having an inner channel therethrough operably connected to the internal channel of the shaft, the curvilinear outer perimeter of the head sized to at least partially fit within an acetabular liner.

2. The instrument of claim 1, further comprising:

a first o-ring circumscribing the curvilinear outer perimeter of the head and sized to sealingly fit between the curvilinear outer perimeter of the head and an acetabular liner.

3. The instrument of claim 2, further comprising:

a second o-ring circumscribing the curvilinear outer perimeter of the head and adjacent the first o-ring, and wherein the head further comprises:

a secondary inner channel having a first and a second end portion and operably connected at the first end portion to the internal channel and opening at the second end portion at the outer perimeter of the head between the first and second o-ring.

4. The instrument of claim 1 further comprising a valve, the valve operable to seal the internal channel such that air is not allowed to pass between the atmosphere and the internal channel through the valve.

5. The instrument of claim 1, further comprising:

a stop check valve having an inlet and an outlet, the inlet operably connected to the internal channel and the outlet operably connected to the atmosphere, such that when the stop check valve is in a non-stopped position, air from the atmosphere is not allowed to pass into the internal channel through the stop check valve but air from the internal channel is allowed to pass to the atmosphere through the stop check valve and such that when the stop check valve is in a stopped position, air from the internal channel is not allowed to pass into the atmosphere through the stop check valve; and

a valve movable between a first position and a second position and having an inlet and an outlet, the inlet operably connected to the atmosphere and the outlet operably connected to the bulb syringe, such that when the valve is in the first position, air is not allowed to pass between atmosphere and the internal channel, and when the valve is in the second position, air is allowed to pass between the atmosphere and the internal channel.

6. The instrument of claim 5, wherein the sealable valve is a stop check valve.

7. The instrument of claim 5, wherein the stop check valve is located on the bulb syringe, such that air passing between the inner channel and the atmosphere through the stop check valve passes through the bulb syringe.

8. The instrument of claim 1, wherein the shaft is bent between the first end portion and the second end portion.
9. The instrument of claim 8, wherein the shaft comprises a bend of between about 20 and about 45 degrees between the first end portion and the second end portion.
10. The instrument of claim 9, wherein the shaft comprises a bend of about 30 degrees between the first end portion and the second end portion.
11. The instrument of claim 1, wherein the head comprises an internal chamber communicating with the inner channel, and wherein the second end portion of the shaft sealingly fits within the internal chamber.
12. A method of inserting an acetabular liner into an acetabular cup comprising the steps of:
 - positioning an acetabular liner on the head of an instrument;
 - placing the acetabular liner into an acetabular cup; and
 - squeezing for a first time a bulb syringe connected to the instrument to expel air out of the bulb syringe.
13. The method of claim 12, wherein the step of squeezing is performed before the step of placing, the method further comprising the steps of:
 - applying a vacuum between the head and the acetabular liner; and
 - releasing the vacuum, the releasing step performed after the step of placing.

14. The method of claim 13, further comprising, after the step of applying a vacuum, the steps of:

shutting an isolation valve;

removing the bulb syringe from operable connection to the instrument;

replacing the bulb syringe into operable connection with the instrument;

and

opening the isolation valve.

15. The method of claim 14, further comprising, after the step of placing the acetabular liner into an acetabular cup, the step of:

squeezing for a second time the bulb syringe to expel air out of the bulb syringe.

16. The method of claim 13, wherein the step of releasing the vacuum comprises the step of:

opening a vent valve.

17. A method of inserting an acetabular liner into an acetabular cup comprising the steps of:

squeezing the bulb syringe of an instrument a first time;

sealingly engaging the head of the instrument within an acetabular liner so as to create a sealed area between the head and the acetabular liner;

drawing a vacuum in the sealed area;

placing the acetabular liner in an acetabular cup;

removing the vacuum from the sealed area; and

separating the head from the acetabular liner in the acetabular cup.

18. The method of claim 17, wherein the step of removing the vacuum comprises the steps of:

opening a vent valve on the instrument, and wherein the step of separating the head from the acetabular liner comprises the steps of:

shutting the vent valve;

stopping a stop check valve on the instrument; and

squeezing the bulb syringe a second time to separate the head from the acetabular liner.

19. The method of claim 18, further comprising, before the step of squeezing the bulb syringe the first time, the steps of:

shutting an isolation valve on the instrument;

shutting the vent valve; and

placing the stop check valve in a non-stopped condition, and wherein the step of drawing a vacuum comprises the steps of:

opening the isolation valve; and

releasing the bulb syringe.

20. A kit providing a handheld instrument for insertion of an acetabular liner into an acetabular cup comprising:

a shaft having an internal channel therethrough and a first and a second end portion, the first end portion configured to sealingly engage with a bulb syringe, the second end configured to sealingly engage with a head; and

a plurality of heads, each head having a curvilinear outer perimeter and configured to be operably attached to the second end portion of the shaft, each of the plurality of heads having an inner channel therethrough capable of

operable connection to the internal channel of the shaft, each of the plurality of heads having a curvilinear outer perimeter sized to at least partially fit within an acetabular liner.

21. The kit of claim 20, further comprising:

a bulb syringe configured to sealingly engage the first end portion of the shaft and capable of operable connection to the internal channel of the shaft.

22. The kit of claim 20, wherein each of the plurality of heads has an outer perimeter of a size different than the size of each of the other plurality of heads.

23. The kit of claim 20, wherein the plurality of heads comprises a first head, a second head and a third head, the first head having a curvilinear outer perimeter sized to at least partially fit within a 26 mm diameter acetabular liner, the second head having a curvilinear outer perimeter sized to at least partially fit within a 28 mm diameter acetabular liner, and the third head having a curvilinear outer perimeter sized to at least partially fit within a 32 mm diameter acetabular liner.

24. The kit of claim 20, wherein the plurality of heads comprises:

a first head having a curvilinear outer perimeter sized to at least partially fit within a first acetabular liner having a first diameter; and

a second head having a curvilinear outer perimeter sized to at least partially fit within a second acetabular liner having a second diameter, the first diameter different from the second diameter, and wherein the first acetabular liner and the second acetabular liner have diameters of 26 mm, 28 mm, 32 mm, 36 mm or 38 mm.

25. An instrument for insertion of an acetabular liner into an acetabular cup comprising:

a shaft having an internal channel therethrough and a first and a second end portion, the first end portion configured to sealingly engage with a hand held vacuum producing device; and

a head having a curvilinear outer perimeter and operably attached to the second end portion of the shaft and having an inner channel therethrough operably connected to the internal channel of the shaft, the curvilinear outer perimeter of the head sized to at least partially fit within an acetabular liner.

26. The instrument of claim 25, wherein the head is configured to sealingly fit within an acetabular liner.

27. The instrument of claim 25, the head comprising:

a first groove circumscribing the curvilinear outer perimeter of the head;
and

a first o-ring located within the first groove and sized to sealingly fit between the curvilinear outer perimeter of the head and an acetabular liner.

28. The instrument of claim 26, the head further comprising:

a second groove circumscribing the curvilinear outer perimeter of the head and adjacent the first groove;

a second o-ring located within the first groove; and

a secondary inner channel having a first and a second end portion and operably connected at the first end portion to the internal channel and opening at the second end portion at the outer perimeter of the head between the first and second groove.

29. The instrument of claim 25 wherein the hand held vacuum producing device is a syringe.

30. The instrument of claim 28, wherein the syringe is a bulb syringe.